http://dx.doi.org/10.2106/JBJS.CC.21.00778

September 1, 2022

Traction and Closed Reduction Technique for Periprosthetic Femur Fractures in Osseointegration Amputees

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Hoellwarth et al. have written an interesting case report on a technique of applying closed reduction and traction in individuals with a periprosthetic fracture proximal to a femoral osseointegration prosthesis to allow operative fixation of the fracture [ref. 1]. Hip fractures are common in individuals with above knee amputation from increased risk factors such as osteopenia and risk of falling (ref?). The technique to perform traction and (closed) reduction in patients with an above knee amputation is challenging due to the lack of an intact lower leg and foot to mount the traction table in combination with a short amputation stump. These periprosthetic fractures also occur in individuals with a proximal femur fracture who have undergone treatment with a bone anchored prosthesis using an osseointegration implant in the past and may undergo standard surgical treatment when indicated [ref. 1 and 2.]. These individuals however have the unique option of simply clicking on the artificial leg in the operating room and then mounting the traction table in a standard manner as if it were an intact leg to allow traction and closed reduction [see figure]. We have successfully performed surgical fracture treatments on 10 patients with the placement of DHS, angled blade plate and/or cannulated screws using this technique since 2014. Compared to the technique described by Hoellwarth et al., this offers the advantage of a situation corresponding almost completely to the conventional treatment of a proximal femur fracture in people without a leg amputation. One challenge remains, as stated by Hoellwarth et al, related to the limited bone space, ultimately rendering intramedullary fixating devices obsolete.
Figure: Intraoperative photo of traction with artificial limb.jpg

References

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Conflict of Interest: None Declared